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COLLECTED IN SOUTH CAROLINA 1704-1707: THE PLANTS OF JOSEPH LORD

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ABSTRACT

Joseph Lord collected plants in Dorchester, South Carolina, in the first decade of the 18th century. He sent these plants to James Petiver in London. After Petiver's death, Lord's collections ended up in the collections of Sir Hans Sloane and are now in the Sloane Herbarium in the Natural History Museum in London. We have photographed Lord's herbaria and identified the vascular plants. We present these determinations along with transcriptions of the labels that Lord wrote to accompany his plant specimens, in which he describes growing conditions, collection dates, and possible uses of the plants. This collection, assembled in the earliest days of European settlement of the Carolinas, is a valuable addition to the historical botany and ecological study of the region.

KEY WORDS: Joseph Lord, Sloane Herbarium, herbarium, historic botany, ecology, South Carolina, digital imaging, Catesby, Creative Commons, open source

Joseph Lord was a minister by trade, not a botanist. The details of his life are scanty. He was born in 1672 in Charlestown, Massachusetts, graduated from Harvard in 1691, and became a minister in Dorchester, Massachusetts. In 1695, Lord and several others sailed to South Carolina to found a new town. The town of Dorchester was located on the Ashley River, about 15 miles inland from Charleston. There Lord constructed a "plantation," for which he cleared land. Lord stayed there, raising a large family and running the local church until he returned to Massachusetts in 1720 (Lord 1920; Anon 1920).

Lord also found time to indulge a serious study of natural history. During the first decade of the 18th century, he engaged in an enthusiastic correspondence on plants, animals, and the natural world with James Petiver. Petiver (1665-1718) was an apothecary and botanist in London. He corresponded with a number of collectors in the British colonies and assembled a large collection of specimens sent to him by distant collaborators.

Lord sent Petiver many boxes of specimens, including dried plants, Indian arrowheads, and pieces of animals such as the "bill of a Garr-fish." He was apparently plagued by his lack of knowledge and inability to acquire books on natural history. He found the distance to Charleston somewhat inconvenient for mailing packages to London and regretted that he often missed ships departing from Charleston (Lord 1920) (Anon 1920).

Despite these difficulties, Lord sent Petiver at least 125 plant specimens that survive today. Petiver bound Lord's collections in several volumes, organizing them according to taxonomy and pasting Lord's beautifully written labels onto the pages. After Petiver's death in 1718, Sir Hans Sloane purchased his collections and incorporated them into the Sloane Herbarium. Lord's specimens are in the Sloane Herbarium today.

These collections are in H.S. 268 (ff. 1-77), H.S. 284 (ff. 40-91), H.S. 285 (ff. 1-8), H.S. 158 (ff. 5, 16-18, 213, and 245); H.S. 159 (ff. 28, 212); and H.S. 267 (f. 74). Dandy described H.S. 268 "Plants from Carolina by Mr Job (*recte* Joseph) Lord (m. Sir Hans Sloane). Most of the specimens have Lord's own labels. A few have been determined by Solander." Dandy noted that the specimens are in "good condition" and that they were gathered in 1704. He said that "most have a descriptive label in Lord's beautiful neat hand, giving information as to habitat, characters and date of collection, and showing that Lord was possessed of some botanical knowledge" (Dandy 1958).

Lord's materials are an extremely valuable snapshot of South Carolina just before extensive European settlement. Most of his collections date from a single year, 1704. A few are from 1707. Whatever he collected was almost certainly growing there before Europeans arrived. Lord also thought carefully about his work; his labels and his letters reveal a mind constantly observing the world around him and attempting to organize what he saw into a stable framework. The framework of Linnaean taxonomy did not yet exist, but in Lord's collections and Petiver's organization of it, we can see the beginnings of plant taxonomy as it was later developed.

An account of Lord's collections has never before been published. We are pleased to add this to *Botanica Caroliniana*.

Methodology

Photography process

We did not know about Joseph Lord when we began the photography for *Botanica Caroliniana* in November 2011. We had not had access to a copy of Dandy's *Sloane Herbarium* during the planning for that trip to the Natural History Museum London, and so we were forced to consult it somewhat hastily while on site at the NHM. While we were there on that initial visit, we photographed Dandy's guide to the herbarium and subsequently converted it into a searchable pdf. Thereafter we could at our leisure search for more Carolina materials, which led us to three men who collected in South Carolina in the first decade of the 1700s: Joseph Lord, Col. Halsteed, and George Franklin.

Hackney Blackwell returned to London in June 2013, having arranged with curator Charlie Jarvis to photograph these early collections from the Sloane Herbarium. For this visit, we could not transport all of the equipment we had used previously, including the portable copystand and the large tripod. Accordingly, Hackney Blackwell shot all photographs with a handheld camera and available light, which included fluorescent lights in the ceiling of the room and the natural light from a large window. She used a Nikon D7000 with a Nikon 20mm *f*/2.8 AF-D lens and set the aperture to *f* 5.6. The camera was set to underexpose images by ½ stop, helping to ensure clarity, with the assumption that the resulting RAW images would "pushed" in post-processing.

This system had strengths and weaknesses. The camera has an LCD screen for previewing images, useful for verifying focus. A handheld camera is extremely flexible for framing. With the herbarium volumes propped on the table with foam wedges, it was possible for a single operator to

perform both photography and handle the books. We brought along an iPad and used it to examine the photographic results while still in the museum, and found them adequate.

Back home, we did find some shots that were slightly blurry, especially shots of Lord's labels. Hackney Blackwell attempted to make sure all shots of text and plant parts were perfectly clear but did not quite reach this goal in every case. Post-processing using Aperture allowed us to normalize white-balance, adjust exposure, and apply sharpening, which helped some. On the other hand, despite some imperfections, all photographs turned out clear enough to identify the plants and to read the labels. It was a matter of getting material that was good enough for our work. Handheld photography, while not perfect, has proven adequate for this task. This is useful to know because there are always occasions when a full complement of equipment is unavailable. It would be a pity to waste an opportunity to collect material when a handheld camera might produce satisfactory results.

Identification

All determinations were made by Patrick D. McMillan in collaboration with Hackney Blackwell. With our photographs installed on our image service, it was easy and convenient to examine them to determine taxa and transcribe Lord's labels. As we did with Mark Catesby's collections, McMillan and Hackney Blackwell set up their two laptops side by side. There we could access the Internet to examine images of Lord's specimens and display them alongside modern photographs of taxa. We consulted Alan Weakley's Flora of the Southern and Mid-Atlantic States, Working Draft of 30 November 2012, for all taxonomic nomenclature.

Results

We have organized our data according to the order in which Lord's specimens appear in the Sloane collections. We chose to do this instead of arranging taxa by family so that Petiver's organization will be apparent. The clumps of specimens by family are easy to see in this format.

Vol.	Fol.	Scientific Name	Family	Lord's Label
158	5	*Selaginella apoda* (L.) Spring	Selaginellaceae	
158	5	*Dendrolycopodium obscurum* (L.) A. Haines	Lycopodiaceae	
158	5	*Lycopodiella appressa* (Chapman) Cranfill	Lycopodiaceae	This is a kind of Ground Moss: Or at least, it grows among it. It is green, I think, all the year: Or if die any time of year, it is at Midsummer. It was Gathered Dec. 12, 1707. It grows in wet mossy ground. Job. Lord.
158	16	*Polystichum acrostichoides* (Michx.) Schott	Dryopteridaceae	Lonchitis; or, rough spleenwort. This seems to be one sort of it. It grows in our swamps & low ground: is green here all winter, as well as summer. I have seen some of the leaves near two foot in length, & with such specks of dust as Ceterach has; but it is rare to find that.
158	16	*Pleopeltis polypodioides* (L.) E.G. Andrews & Windham ssp. *michauxiana* (Weatherby) E.G. Andrews & Windham	Polypodiaceae	
158	17	*Dryopteris ludoviciana* (Kunze) Small	Dryopteridaceae	A sort of Fern, that is green with us all the year. If I mistake not, it was the root of this with which an Indian trader told me that he cured himself of the Lame distemper (as it is here called): But what is, it is hard to know. For some call Lues Venerea so; others call another Distemper which is more than ordinary Malignant Scurvey. Job. Lord.
158	18	*Asplenium platyneuron* (L.) BSP	Aspleniaceae	Asplenium, or Ceterach. Smooth Spleen-wort. This Grew out of the sides of a well; but it grows also in our swamp & wet grounds, upon

				logs that are covered with Moss & rotten, & also upon Hassocks that are mossy; But seldom so large as these leaves are. It is to be found green most part of the year. Gathered, Dec. 12, 1707.
158	18	*Pellaea atropurpurea* (L.) Link	Pteridaceae	
158	213	*Gentiana saponaria* L.	Gentianaceae	I take this to be the first Gentian of Culpper's Description in his English Physician. It has it's flowers usually at the top of the Stalks sometimes 6 to 7 together; but some creature had bit off the top of this; which occasioned that flower to grow as you see. It is found beginning to blossom at the middle of October, & continues in flower, til the frost kills the leaves & stalk which was not this year till the middle of December. This gathered, Nov. 8, 1707./The Root of that Gentian, the Stalk & flower whereof is in the Box. Gathered Dec. 12, 1707
158	245	*Aureolaria virginica* (L.) Pennell	Orobanchaceae	
158	245	indet.		This grows in low & wet ground by brooks. It is in flower late in October. The leaves grow two & two, not usually making a cross as in this, yet one Couple standing frost to the next from bottom to top.
158	245	*Schwalbea americana* L.	Orobanchaceae	
159	28	*Platanthera integra* (Nuttall) A. Gray ex Beck	Orchidaceae	
159	28	*Platanthera cristata* (Michaux) Lindley	Orchidaceae	
159	212	*Rhododendron viscosum* (L.) Torrey	Ericaceae	
159	212	*Rhododendron* sp.	Ericaceae	
159	212	*Lyonia mariana* (L.) D. Don	Ericaceae	
159	212	*Rhododendron atlanticum* (Ashe) Rehder	Ericaceae	
159	212	indet.		
159	212	*Gaylussacia dumosa* (Andrews) Torrey & A. Gray	Ericaceae	
267	74	indet.		This is the same plant I formerly sent the root whereof an Indian commended against the biting of the rattle-snake; but then it was not in the seed, as now, Sept. 27, 1704.
268	1	*Ctenium aromaticum* (Walter) Wood	Poaceae	The root of this grass tastes somewhat like Pellitory of Spain, but I think a little more subtile, hot, & Pierceing. Being used as a Masticatory it draws Rheum out of the Head, & so cures the Tooth-ach, if it come of a watery or Phlegmatick Humor. I have infused it in Purges for the Dropsy & find it Powerfully to Provoke Urine. Gathered Sept. 19, 1704. The place of its growth, is among little bunches of bushes that grow in the moist parts of our Savanna & sometimes is found growing among other grass, tho there be no bushes.
268	3	*Carex striata* Michx.	Cyperaceae	This rushy plant, with a triangular stalk had no companion of it's own kind, for which cause you have but one stalk. Gathered Aug. 15, 1704. In wet, low, ground.
268	5	*Juncus scirpoides* Lam.	Juncaceae	This grows in Savannas & such like moist grassy places. Gathered, June 5 1704.
268	5	*Rhynchospora rariflora* (Michx.) Elliott	Cyperaceae	This was gathered, June 5th, in a moist, but not fenny Savanna Ground.
268	7	*Xyris platylepis* Chapman	Xyridaceae	This is very common in our low, wet, & grassy Lands, Gathered, Aug. 15, 1704. It is near about a month since I saw some of it in flower.

268	9	*Tragia urens* L.	Euphorbiaceae	This grows in high & dry ground. Gathered about the middle of July. The flower is of a brownish color, very small, & appearing out of little husks as if it were seed.
268	9	*Lachnocaulon anceps* (Walter) Morong	Eriocaulaceae	This Rushy Grass, or Grassy Rush, grows in wet Ground. Gathered near the beginning of May 1704. It seems to be too short for your Randalia Mariana. There is another Rush with somewhat a larger white head, which I intend before long to get Specimens of.
268	9	*Eriocaulon decangulare* L.	Eriocaulaceae	I suppose this may be your Randalia Mariana Procerior. It grows in Savannas & such like moist grassy places, gathered, Jun. 5, 1704.
268	11	*Tragia urens* L.	Euphorbiaceae	
268	13	*Lactuca* sp.	Asteraceae	this I supposed to be a Ragweed, till I took notice of your two ???cea's of Carolina (932, 933); which if they be the plants that I guess them to be, seem to be of the same tribe with this. It's flower is yellow somewhat smaller than those of the ordinary Sow-thistle, of the same color & shape. There issues out of it a yellowish milk there were some flowers full blown when I gathered it, Sept. 7, 1704, in high dry Land.
268	15	indet.		This seems to be an Hieracium. Gathered (one plant) about the first or 2nd day of Aug. 1704 in weedy ground near the edge of a Savanna; which is the place it mostly grows in. Another (if it be not a differing sort) which has the knobbed Root & no such bunch of leaves near the root, gathered, Sept. 12.
268	17	*Lactuca canadensis* L.	Asteraceae	This Plant has a milky juice. Gathered Sept. 12 1704 in low & dry land.
268	19	*Hieracium gronovii* L.	Asteraceae	Mousear. It grows in moist grassy ground most usually; but is also found in woods, that are dryer. Gathered about the middle of May 1704.
268	19	*Pyrrhopappus carolinianus* (Walter) D.C.	Asteraceae	I am at a loss to what tribe to refer this Plant. It has narrow grass-like leaves, a yellow flower; one was full blown when I gathered it, which is now turned into a downy Head, round after the manner of Dandelion & Hawkweed; it will, I suppose, be lost before it gets to you. Gathered, about May 6, 1704, in a piece of Ground that was newly cleared. I have seen it since by the High way side, but it is not common.
268	21	*Euphorbia exserta* (Small) Coker	Euphorbiaceae	This I sent you in the Last Box, & now send it again to show you that it is yet in Blossom, the whole plant & root is full of milk. Gathered Jun. 15, 1704. The leaves of this are narrower than that I sent before.
268	23	*Pityopsis graminifolia* (Michx.) Nuttall var. latifolia Fernald	Asteraceae	This also grows in high dry land. Gathered abt beginning of October, 1704.
268	25	*Symphyotrichum concolor* (L.) Nesom	Asteraceae	This plant bears a reddish purple flower, which was blown when I gathered it, abt the beginning of October 1704. Grows in high, dry land.
268	27	*Ionactis linariifolia* (L.) Greene	Asteraceae	The flower of this was much of the same color (vix, par???), but differing in figure consisting of a yellow head set above a pole of such colored leaves as the other. Grows in high land. Gathered abt the beginning of October, 1704.
268	29	*Conyza canadensis* (L.) Cronquist var. *pusilla* (Nuttall) Cronquist	Asteraceae	These two small-flowered wild daisies (as I take them to be) I put together, as being gathered both in a Day; Viz, May 4th, 1703, in my Plantation by my house, which is an high light land. They are still in flower, May 23.

				The blew-flowered one is not so common as the other. / This is a troublesome weed in our Plantations & Pastures. It's flower resembles that which we call Groundsel, [several words crossed out] which I intend to get & send when it flowers (which will be, now, quickly); which it also resembles in smell. Gathered July 14, 1704.
268	31	*Chrysopsis mariana* (L.) Elliott	Asteraceae	
268	33	*Erigeron quercifolius* Lam.	Asteraceae	
268	33	*Ageratina aromatica* (L.) Spach	Asteraceae	This is of the Tribe, doubtless, of that which I have sent in this present box, of whose vertue against the biting of the rattle-snake I have made mention. Gathered, Sept. 19, in low, but dry, land.
268	35	*Eupatorium rotundifolium* L.	Asteraceae	This (I think) I have sent you formerly without a name, as now it comes: but I desire you would please to let me know it's name. Besides that an Indian told me of it's use in feavers, its found to be Alexipharmacal, & an admirable antidote against the Poison of Rattle-snakes in particular, conquering the Venom of their biteing. Gathered, Aug. 15, 1704, having been near a month in flower. It grows common in our woods, both in high & low land. There are divers other plants growing commonly that seem to be varieties of this.
268	37	*Eupatorium mohrii* Greene	Asteraceae	??? grows commonly in wet grassy land. Gathered, Sept. 29.
268	39	*Pseudognaphalium obtusifolium* (L.) Hilliard & Burtt	Asteraceae	This grows commonly in Land somewhat moist as well as drier, Gathered Sept. 6, 1704.
268	39	*Liatris pilosa* (Aiton) Willdenow	Asteraceae	This was gathered Aug. 4, 1704, in high land among bushes etc.
268	41	*Liatris squarrulosa* Michaux	Asteraceae	If this plant do not continue all the winter green, it shoots up leaves early in the Spring & a while after begins to shoot up a stalk. The first leaves are larger than any of these. The root (I think) continues many years. It flowers not till the summer is almost gone. The head out of which the flowers do shoot appears near a month before they bloom. You have many head not yet blown on this plant. Gathered Sept. 7, 1704, in high dry land, & grows both in wooddy ground and that which is cleared.
268	43	*Trilisa paniculata* (J.F. Gmelin) Cassini = *Carphephorus paniculatus* (J.F. Gmel.) Herb.	Asteraceae	This grows for the most part, in wet grassy ground. Gathered Sept. 12 or 13, 1704.
268	43	*Cyclospermum leptophyllum* (Persoon) Sprague ex Britton & Wilson	Apiaceae	This Plant began to flower about a fortnight or three weeks ago. It grows in wet waterish places. It is now generally seeding. I may put in a specimen or two in the seed. June 15, 1704.
268	45	Indet.		The leaves of this are smooth, of a pale green colour, at the bottom, as large as Bay leaves, but toward the top, the leaves are smaller with some harmless prickles on them. The Heads, you may see, are like thistles; & so are the flowers somewhat like them, of a pale blew & some almost white. They grow in low ground by swampsides etc. Gathered June 14.
268	47	*Liatris squarrosa* (L.) Michaux	Asteraceae	This was gathered Aug. 4, 1704. In high dry land; which is the land it usually grows in, under the sides of fences(?) & in such like places.
268	49	*Helianthus atrorubens* L.	Asteraceae	This grows in such like ground as the former, gathered same time, Sept. 6.
268	51	*Silphium asteriscus* L.	Asteraceae	This grows plentifully in many places, but most usually in high dry land. Gathered June 15, 1704.

268	53	*Helianthus strumosus* L.	Asteraceae	This sometimes grows six, seven, even eight feet high; gathered, Sept. 6, 1704, in a part of my plantation. It grows ordinarily about 4 or 5 feet high; it is commonly found in land meanly fruitfull, as well as that which is more fruitfull, both higher and lower. A Chirugeon shewed it me by the name of wood-gold, or wood-marigold; but others call it All-heal.
268	55	*Heliopsis helianthoides* (L.) Sweet var. *gracilis* (Nuttall) Gandhi & Thomas	Asteraceae	This I gathered in my Pasture, in a good soil, Sept. 6, 1704, in land of a mean driness.
268	57	*Coreopsis gladiata* Walter	Asteraceae	This is common in wet land. Gathered Sept. 29, 1704. If I mistake it not it is a plant that springs out of the ground on single leap like Adders-tongue, but only without a tongue, & as large as one of them that is next to the root in this.
268	59	*Rudbeckia hirta* L.	Asteraceae	This plant is plentiful in most sorts of ground. Gathered June 15, 1704.
268	61	*Melanthera nivea* (L.) Small	Asteraceae	This plant is remarkable in its stalk & leaves. It grows pretty frequently in lanes somewhat low by fence sides & among bushes. Gathered Aug. 4, 1704. Its height was near six feet; but commonly it is 4 or 5.
268	63	*Agrimonia microcarpa* Wallroth	Rosaceae	This is our Countrey Agrimony, whose root has many clogs hanging from it by Strings; in which I suppose it to differ from that in Europe; for that I never read of any such clogs in any description thereof that I have met with. Gathered, Sept. 6, 1704, in a good soil. / This goes for Agrimony, & I can find no reason to question it only that Authors make no mention of those ??? at it's roots which that has. It was gathered in the beginning of April 1705, & grows in good soils, where the earth is light. If you think it not to be Agrimony send word what it is, if you please.
268	65	*Verbena carnea* Medikus = *Stylodon carneus* (Medik.) Moldenke	Verbenaceae	This Plant seems to be a Sideritis, or Iron-wort. It grows in grassy land, where the soil is good, & usually in places somewhat moist. Gathered, July 13, 1704, when some plants of it had been in flower near a month.
268	67	*Thalictrum macrostylum* Small & Heller	Ranunculaceae	This I take to be Thalictrum or Bastard Rhubarb. It grows generally in a fertile low land. Gathered May 3, 1704.
268	69	*Prunella vulgaris* L. var. *lanceolata* (W. Barton) Fernald	Lamiaceae	Prunella. It grows with us in moist woods. Gathered, about May 19, 1704.
268	69	*Thaspium trifoliatum* (L.) A. Gray	Apiaceae	This Plant grows plentifully near to my House, in a good soil; not over dry, nor yet wet. Gathered about the beginning of May 1704.
268	71	*Pycnanthemum flexuosum* (Walter) BSP	Lamiaceae	This is what we call Wild Hyssop, but smells much like Calamint, which it resembles both[?] in flowers & seed. I send it now, Sept. 29, to shew it is not yet [???]
268	73	*Pycnanthemum flexuosum* (Walter) BSP	Lamiaceae	This is commonly called wild Hysop. I know not whether it is ??? Hysop or no. It has somewhat of the smell of Hysop. Grows commonly in low moist grassy ground. Gathered, Jun 13, 1704.
268	75	*Scutellaria integrifolia* L.	Lamiaceae	I am ready to conceive this to be a Bugle. It grows in good soils near to moist places, or in moist ground most usually. Gathered June 3 1704. There is another plant that has just the same flowers which is now (Jun. 15) generally gone to seed, & differs only in that it has a short, rough leaf.
268	77	*Clematis crispa* L.	Ranunculaceae	This climbing plant I found by the highway side, among an Heap of dry brush, near to a brookside, about 2 miles from my house, about the beginning of May (I think the 5th), 1704.

284	40	*Lobelia glandulosa* Walter		
284	40	*Lactuca canadensis* L.	Asteraceae	This grows in low but dry land. It's leaves have a white milky juice in them. Gathered Sept. 12, 1704. The flower is a deeper blew, but of the same shape with that gathered Sept. 9.
284	42	*Lobelia nuttallii* Schultes	Campanulaceae	A plant, whose flower & height much resembled this, I think I sent you in the last Box; but differing from this, in that it had more leaves & flowers upon the stalk; the flowers were of a deeper color, & the leaves of the flowers less pointed than those of this. Also that had branches full of leaves, which spread on the ground at the bottom of that stalk on which the flowers grew, which leaves of the branches stood by fours so as to make a cross at each joint; none of which is in this. The Stalk also of this is finer & weaker than that. This grows in many places where that did; but chiefly seems to delight in ground that is somewhat moist, & grows only among Grass & weeds. Gathered July 14, 1704.
284	43	*Ruellia caroliniensis* (J.F. Gmelin) Steudel	Acanthaceae	This bears a blew flower or two, in one of those umbles which you see at the joints, which in shape somewhat resembles those of the bindweed. Gathered Sept. 7, 1704, in a piece of ground somewhat moist & fat, near a brook.
284	45	*Ruellia caroliniensis* (J.F. Gmelin) Steudel	Acanthaceae	This I gathered about a week ago, in a low ground, in which sort of ground it usually grows. June 15, 1704. It differs in stature according to the ground it grows in. The flower is of a pale purple color.
284	47	*Aureolaria flava* (L.) Farwell	Orobanchaceae	This seems a sort of Madder, or Woodroof, or such like herb, grows commonly in Plantations. Gathered about the middle of October, 1704.
284	49	*Agalinis linifolia* (Nuttall) Britton	Orobanchaceae	This plant grows in moist, watery places that are also grassy. Gathered Sept. 23, 1704. It's flower is red inclining to purple.
284	51	*Trichostema setaceum* Houttuyn	Lamiaceae	This plant grows plentifully in some high land. It is of a pleasant smell, somewhat like Calamint. It has been in flower about a month, Sept. 26, 1704. It's flower consists of four lovely blew leaves standing up, & one hanging down, which is near as long again as the rest & flew at the outer end, but nearer to the flower of a greenish white speckled with purple. It has also two long blew chives stand up, as it were to avoid nearness to said hanging long leaf, but bending inward at the top.
284	53	*Oenothera laciniata* Hill	Onagraceae	This is our ordinary scabious. It is now ready to die away, having generally produced it's seed, Jun 15. It grows in our Plantations plentifully.
284	53	*Nuttallanthus canadensis* (L.) D.A. Sutton	Plantaginaceae	This plant grows in abundance in our Plantations about April or May, if they be not plowed before; It's flower is blew. At the bottom, & before the stalk whereon the flower grows runs up, it spreads upon the Ground, having, as you may see, 4 small leaves, like thyme, standing about a branch after the manner of cross-wort. This is the plant which I mention that I thought I had sent before.
284	55	*Oenothera simulans* (Small) W.L. Wagner & Hoch	Onagraceae	This Scabius with a white flower, I have yet met with nowhere but in a piece of ground belonging to myself, which is a piece of upland between two brooks. Gathered, Sept. 7, 1704.
284	57	*Stylosanthes biflora* (L.) BSP	Fabaceae	The Branches of this plant lean toward the

				ground, & so spread, yet raise themselves a little. The flowers are yellow of the shape of Pease flowers. Gathered, June 15, 1704. It is still to be found in flower July 28.
284	59	*Tephrosia spicata* (Walter) Torrey & A. Gray	Fabaceae	This grows in high light land; bears a red flower, after which comes a bud. Gathered Jun 15, 1704.
284	61	*Chamaecrista fasciculata* (Michaux) Greene	Fabaceae	This has some resemblance of Sena, both in leaves & flowers, & is common in high & low land that is not wet, growing by fence sides and in places that are overrun with brush & weeds. Gathered Aug. 3, 1704. It grows sometimes about 3 or 4 foot high; but commonly it's branches lean toward the Earth & spread 3 or 4 feet broad. It's Root & part of the stalk is put in with it.
284	63	*Orbexilum pedunculatum* (P. Miller) Rydberg var. *psoralioides* (Walter) Isely	Fabaceae	This plant grows in woody low ground, that is moist & grassy. It was gathered June 2d, 1704.
284	65	*Rhynchosia tomentosa* (L.) Hooker & Arnott	Fabaceae	This plant is common in high light ground. After the flower come forth short cods, about an inch long containing seed like pulse. It's root consist of fibres swelling out in many places into rough clogs, as big as a goose quill, or bigger, somewhat flat, with the hogs root much after. It was gathered June 2. It was then beginning to flower.
284	67	*Lespedeza violacea* (L.) Persoon	Fabaceae	These three leaved pants, have small flowers, of a pale purplish color, inclining to red, some more blew; all of the shape of pease flowers, small considering the bigness of the plant. Grow chiefly in dry cleared ground. gathered Sept. 7, 1704 (two sorts). The several sorts are distinguished by their leaves.
284	69	*Desmodium nuttallii* (Schindler) Schubert	Fabaceae	
284	71	*Polygala lutea* L.	Polygalaceae	This is commonly called wild Mary-gold among ???. It grows in wett swampy Grounds & other moist grassy places. Gathered Jun. 3, 1704.
284	71	*Polygala grandiflora* Walter = *Asemeia grandiflora* (Walter) Small	Polygalaceae	This I have sent you already, of else it is long since put into this present box; but I now send it again, to shew you it is to be found still in flower. July 14, 1704. Be pleased to let me know what is the name of it.
284	73	*Polygala setacea* Michaux	Polygalaceae	This has been in flower near a month; some I found in the flower this day, Jun. 15, 1704. It grows in low ground usually where it is grassy. Gathered Jun. 2.
284	73	*Polygala grandiflora* Walter = *Asemeia grandiflora* (Walter) Small	Polygalaceae	This grows commonly about in high ground. It was gathered in May, & is yet in flower. June 15, 1704.
284	75	*Zephyranthes atamasca* (L.) Herbert	Amaryllidaceae	This plant, when I gathered it, with some more specimens of the same (which were eaten by some worm or other insect & so spoiled) about the middle of April; had a great white flower on it (the faded leaves whereof you may see) standing on the top of the stalk, & 2 or 3 narrow grasslike leaves, somewhat thick, of a dark green color, smooth & shineing. They grow in wet low ground, in wet places on our Savannas, & in swamps sometimes; are in flower the most part of April.
284	75	*Crotalaria rotundifolia* Walter ex J.F. Gmelin	Fabaceae	This plant spreads on the ground, only it has a stalk rising from among the leaves which bears divers yellow blossoms after which succeed short cods, when they are ripe black with a blewish dust on them, which have seed in them that rattle. Gathered in the beginning of June, or end of May, 1704. Are in seed now, Jun. 15.

284	77	*Sabatia campanulata* (L.) Torrey	Gentianaceae	This red flowered small Centaury grows in our plantations, after they are laid down. This was gathered, Aug. 18, 1704, but this was the only stalk I then found., it haveing been pretty generally in flower a month befor. There are also with us commonly a white flowered, & yellow-flowered Centaury, which I doubt it is too late to look for this year.
284	77	*Hypoxis hirsuta* (L.) Coville	Hypoxidaceae	This yellow Ornithogalum or Starflower, I found in they pine woods, about the beginning of August, 1704. but could find no more but this one plant.
284	77	Indet		
284	79	*Sabatia quadrangula* Wilbur	Gentianaceae	??? has square stalks like Centaury the left, & the leaves are much like it, but small & growing thick upon it. Its flowers are yellow or near to orange color, roundish leaves & some chives in the middle. Gathered ?? 31, 1704. In near grassy ground.
284	79	*Spigelia marilandica* (L.) L.	Loganiaceae	This grows in low, but dry fertile lands. Gathered May 13, 1704.
284	79	*Rhexia alifanus* Walter	Melastomataceae	This is that which the Children commonly call Sugar-grass, others Deers-grass; & is accounted a sort of Tea. It differs from all the others, in that this has an hoary & smooth leaf, the others a rough, hairy, & not so green a leaf. A little Difference also there is in the taste, there being some acidness in the taste of the others, mixed with a sweet, which is little or nothing perceived in this. The flowers of this are the same with the others; differing from the white flowered, only in color & greatness; & from the short rough-leaves, in that the flowers of that are a little pointed at the outer end of their leaf, of this & the rest not so. Gathered, July 31, 1704. It grows both in Pine-land & Savanna's.
284	81	*Polypremum procumbens* L.	Tetrachondraceae	This grows plentifully in many places where the land is low & moist. Gathered, Jun. 14, 1704. Is now flowering July 26. / This I suppose to be your Linulum Carolinianum Humistratum. Gathered Sept. 7, 1704. In high ground; though I observe it most plentiful in such places as water stands in after a rain, if there be a black soil for it to grow in. I observed it in flower at least a month ago.
284	81	*Desmodium* sp.	Fabaceae	
284	83	Indet.		
284	85	*Ludwigia alternifolia* L.	Onagraceae	This bears a yellow flower somewhat like Scabious; the leaf also well resembles the same plant, some sort of it. Grows in low moist grass[?]; gathered, Oct. 4, 1704.
284	87	*Rhexia mariana* L.	Melastomataceae	This differs from the red flowered rough Tea in nothing, but only the flower of this is white, & the plant it's self is more branched. Gathered July 24, 1704, in a moist Savanna. It had flowers which fell off with the Gathering. / These specimens whew the white-flowered Deers-grass not to be all so branched as the other that I gathered lately. This I gathered July 31. Yet ordinarily this sort is more branched than this.
284	89	*Rhexia nashii* Small	Melastomataceae	This is the same growth & taste with that sort of plant which the Children hereabouts call Sugar-grass, others Deers-grass, & I think to be a species of Tea. It has also the same sort of flower (which is red, consisting of 4 leaves) & seed vessel. Gathered, July 21, 1704. There is

				another sort with shorter leaves, but is in other respects like this
284	89	*Rhexia petiolata* Walter	Melastomataceae	This is the small leaved Sugar-grass, or Deer's-grass Gathered, abt the beginning of Aug or end of July 1704 in moist land
284	91	*Pogonia ophioglossoides* (L) Ker-Gawler	Orchidaceae	This seems to be a sort of Sway-blade It grows only in or near to fenny & wet grounds Gathered about the 5th or 6th of May, 1704, when there were but few plants in flower They are flowering near all the month
284	91	*Cuthbertia rosea* (Ventenat) Small	Commelinaceae	This plant seems to be of the kindred of that which Gerard (???member?) calls Phalangium Virginianum Ephe???, having such a flower, such stalks & leaves, little heads by the flowers, as if more flowers were come???, but it wants the two leaves which that other hath, manner of Cyress grass; the flowers are smaller, & blew, & fades not so soon It grows in low, but wooddy ground Gathered Jun 13, 1704 About a month ?? weeks before I saw three Plants of the above Phalangium, & not knowing how soon they would fade ??? gather them then, but the next day went to look for them, but could find but one, & in that, the flower of the day before was full blown) together with the heads (I ??? about a Douzen) were sunk in between those two â€ that I could discern, but a little of any of them This was in flower when I gathered it but the flowers are withered
285	1	*Sarracenia flava* L	Sarraceniaceae	This is a differing species of the plant which Gerard calls Hollow-Sea-Lavender (or at least Johnson upon Gerard) & Limonio Congener That which he there describes has a flower upon a Stalk by it's self, but I could never observe any that this has It flourishes all the Summer; Springing up in April or May
285	1	*Platanthera conspicua* (Nash) P M Brown	Orchidaceae	This Satyrion's flower is white Gathered Aug 10, 1704, in one of those that we call wet Savannas These specimens seem to be different sorts by the roots, which are different both in shape & the manner of growth
285	1	*Platanthera ciliaris* (L) Lindley	Orchidaceae	This Orchis has a flower of an Orange coulor (as it were) a little faded Gathered Aug 10, 1704 In Savanna ground
285	4	*Rhododendron atlanticum* (Ashe) Rehder	Ericaceae	This is a low sort of Periclymenum rectum, with white flowers Gathered about the middle of May 1704 Here are two other sorts which are past before this shews it's self One has a pale flower, like a Damask rose in color; the other a flower almost as red as a red rose Both grow also higher than this, which seldom grows above 2 or 3 foot high, & all by brooksides or other watery places If you have met with the Temperature & use of these, please to communicate them
285	4	*Trillium maculatum* Raf	Trilliaceae	This plant grows in moist fertile ground that has a deep loose (or light) soil It has three leaves at the top of the stalk, amidst which stands upright one dark reddish purple flower, when it is full, but greenish before it is full blown You may see the flower in it's perfection in one of the samples, & the shape & manner of standing of the leaves, in the other Gathered May 3d, 1704 Those spots in the leaves that now (dried) look most green, when they are fresh look of the color of the liver of a beast, before it be sodden[?], as it is when taken out of the beast

285	5	*Acer rubrum* L.	Sapindaceae	These are twigs of the maple, with blossoms of a dark red color. Gathered Mar. 17, 1704, at which time most of the trees had dropt their Blossoms; but I met with two, one whereof was full out in blossom the other not fully blown; & accordingly you have smaller on one & full blossoms on the other twig.
285	5	*Aesculus pavia* L.	Sapindaceae	The end of a branch, & the fruit of the shrub which we commonly call Fishpoison, because the root put into the bottom of a basket & the basket much moved to and again in a small pond of standing water, makes all the fish (or the most) in such a Pond to turn up their bellies and so rise to the top of the water as if they were dead, when yet they are taken & eaten without harm. Gathered, Sept. 29, 1704. And grows in our Pastures to our great detriment.
285	8	*Ilex ambigua* (Michaux) Torrey	Aquifoliaceae	This Plant grows not to any great bigness. I have not seen any that grew above three foot high. And indeed it is but lately that I have taken any notice of it & that I have at all was occasioned by an Indian who commends it for the Head-ack in such as have Agues. When it is green the leaf smells much like Potatoes beginning to rot. Gathered about the middle of Sept., 1704.
285	75	*Penstemon australis* Small	Plantaginaceae	Grows in ground somewhat moist, & usually in a good soil. The flowers bell-fashioned of a pale color inclineing to purple & hanging downward. Gathered, May 19, 1704.

Discussion

Lord produced the sort of meticulous notes we can only wish our students would create. His notes contain precisely observed details of phenology and habitat. He recorded a collection date for nearly every specimen. He described the places where specific plants can be found, such as wet savannas, pine woods, swamps, or newly cleared ground. In many cases, he noted how long a plant has already been in bloom. He expected Petiver to remember specimens sent earlier, or to cross-reference specimens within the same box. He really knew his collections.

A partnership of discovery

Nowhere in any of the historical accounts we have found is there any mention of Lord's traveling to London or meeting Petiver in person. Presumably the men never met and their contact was limited to correspondence by mail. However their relationship came about, Lord put a great deal of thought into preparing specimens for Petiver. He collected and described birds and shells as well as plants. His correspondence and labels frequently mention boxes sent in earlier shipments. (Anon 1920) The overall impression is of two men with kindred interests in natural history sharing whatever they could.

In a letter to Petiver dated 1705, Lord mentioned several items that he sent to London in a "Box of Collections," most of which are from the previous year. He said that he has wrapped papers around the plants, as was his custom, along with some other items such as Indian arrowheads and shells. Lord's friend Thomas Pinckney (father of chief justice Charles Pinckney and Major William Pinckney) had recently died; this was a problem for Lord's correspondence with Petiver, because Pinckney had been mailing Lord's letters to London and he was "at some loss, at present, how to get any thing sent to you, liveing [*sic]* my self at so great a distance from Charlstown, & having little or no acquaintance with any Sea fareing [*sic*] men that use to go to London." Lord also complained that he had little skill at "natural Production" and few resources with which to increase his skill, no books

being available for purchase and his only reference a borrowed copy of Gerard's Herbal (*The Herbal, or General History of Plants*, John Gerard, 1597). He wrote of his plant specimens, "I am not capable of ranking them under their Proper Heads; which make me so often desire Information from your self what such & such plants be, & of what nature … & whether it be such a Plant." He requested a copy of Charles' Butler's book on bees if possible. (Lord 1920)

One fascinating aspect of Lord's materials is seeing the emergence of the modern study of natural history and biology. Lord and Petiver were engaged in an energetic exploration of the world around them. The fact that Lord was not trained as a scientist and that he had never been to London seems to have been no hindrance to his participation. The labels accompanying the plant specimens are all in the context of a dialogue with the recipient, full of references to and comparisons with specimens previously sent, speculations as to Latin names, and requests that Petiver identify particular plants if possible. The Sloane Index contains numerous letters to Petiver "full of interesting and detailed observations on the zoology as well as the botany of his district." (Dandy 1958)

Lord's observations

Lord appears to have wanted to convey as much information about his environment as possible, through the medium of bits of dried plant materials. He sent Petiver a *Gentian saponaria* L. in 1707 but explained that "It has it's flowers usually at the top of the Stalks sometimes 6 to 7 together; but some creature had bit off the top of this; which occasioned that flower to grow as you see." He mentioned that his specimen of *Carex striata* Michx. has a triangular stalk, which is correct for a member of the Cyperaceae. He reported milky sap exuding from a *Lactuca* (H.S. 268, f. 13), a *Lactuca canadensis* L. (H.S. 268 f. 17), and *Euphorbia exserta* (Small) Coker.

Weeds in newly cleared ground must have been a problem. Lord described *Conyza canadensis* L. (H.S. 268 f. 19) as a "troublesome weed in our Plantations & Pastures." He found the weedy *Pyrrhopappus carolinianus* (Walter) DC. (H.S. 268 f. 19) in newly cleared ground and by the highway side.

Lord watched his plants over the months and years. Of *Liatris squarrulosa* he wrote, "If this plant do not continue all the winter green, it shoots up leaves early in the Spring & a while after begins to shoot up a stalk. The first leaves are larger than any of these. The root (I think) continues many years. It flowers not till the summer is almost gone. The head out of which the flowers do shoot appears near a month before they bloom. You have many head not yet blown on this plant. Gathered Sept. 7, 1704, in high dry land, & grows both in wooddy [*sic*] ground and that which is cleared."

Tastes and smells appear in Lord's descriptions. He noted that *Pycnanthemum flexuosum* (Walter) BSP (H.S. 268 f. 71, H.S. 268 f. 73), which went by the name wild hyssop, looked and smelled much like Calamint. *Rhexia alifanus* Walter (H.S. 284 f. 79), which children called Sugar-grass or Deers-grass and accounted a sort of Tea, differed from others "in the taste, there being some acidness [*sic*] in the taste of the others, mixed with a sweet, which is little or nothing perceived in this." He believed *Rhexia nashii* Small (H.S. 284 f. 89) to be a similar Sugar-grass or Deers-grass and a species of Tea.

Lord sent Petiver a charming description of the use of *Aesculus pavia* L. (H.S. 285 f. 5) as a fish poison: "The end of a branch, & the fruit of the shrub which we commonly call Fishpoison, because the root put into the bottom of a basket & the basket much moved to and again in a small pond of standing water, makes all the fish (or the most) in such a Pond to turn up their bellies and so rise to the top of the water as if they were dead, when yet they are taken & eaten without harm." He laments that this plant "grows in our Pastures to our great detriment."

Lord's description of *Trichostema setaceum* Houttuyn is particularly precise: "It's flower consists of four lovely blew [*sic*] leaves standing up, & one hanging down, which is near as long again as the rest & flew at the outer end, but nearer to the flower of a greenish white speckled with purple. It has also two long blew chives stand up, as it were to avoid nearness to said hanging long leaf, but bending inward at the top."

The label accompanying *Rhododendron atlanticum* (Ashe) Rehder (H.S. 285 f. 4) contains descriptions of related taxa and a plea for more information: "This is a low sort of Periclymenum rectum, with white flowers. Gathered about the middle of May 1704. Here are two other sorts which are past before this shews it's [*sic*] self. One has a pale flower, like a Damask rose in color; the other a flower almost as red as a red rose. Both grow also higher than this, which seldom grows above 2 or 3 foot high; & all by brooksides or other watery places. If you have met with the Temperature & use of these, please to communicate them."

Medicine in the wild

A number of Lord's labels reflect an interest in medicinal uses of wild plants. Lord had only one book describing plants and their uses, "Culpepper's" English Physician," but gleaned hints from his reading and tried to gather knowledge elsewhere (Dandy 1958). His labels report conversations with Indians and other locals that enhanced his knowledge.

Three of his specimens contain labels mentioning the use of plants against rattlesnake bites. His label for *Eupatorium rotundifolium* on H.S. 268 f. 35 reads:

> "This (I think) I have sent you formerly without a name, as now it comes: but I desire you would please to let me know it's name. Besides that an Indian told me of it's use in feavers, its found to be Alexipharmacal, & an admirable antidote against the Poison of Rattle-snakes in particular, conquering the Venom of their biteing [*sic*]. Gathered, Aug. 15, 1704, having been near a month in flower. It grows common in our woods, both in high & low land. There are divers other plants growing commonly that seem to be varieties of this."

The word "alexipharmacal" means an antidote, from the Greek words *alexein* (ἀλέξειν) meaning "to ward off," and *pharmakon* (φάρμακον), for "drug." Lord's label makes it appear that the Indians and the Colonials who arrived here after them were all looking for the same thing modern doctors use to treat snakebite — an antivenom. He was not far off with this plant. The closely related *Eupatorium perfoliatum* goes by the common name "boneset" or sometimes "ague-weed." It was historically used to treat fevers and other assorted ailments.

One of the other rattlesnake plants is a specimen of *Ageratina aromatica* on H.S. 268 f. 33, which goes by the common names "Small-leaved white snakeroot" or "Lesser snakeroot." *Ageratina* formerly belonged to the genus *Eupatorium*. Lord described this one as "of the Tribe ... of whose vertue [*sic*] against the biting of the rattle-snake I have made mention." Apparently Lord and Petiver were grouping similar plants into tribes.

Lord noted medicinal applications of several other specimens. Of a specimen of *Dryopteris ludoviciana* (Kunze) Small, he wrote that an Indian trader had used it to cure himself of the "Lame distemper," a disease that Lord could not identify. He wrote, "For some call Lues Venerea so; others call another Distemper which is more than ordinary Malignant Scurvey." He described using toothache grass, *Ctenium aromaticum* (Walter) Wood (H.S. 268 f. 1) thus: "Being used as a Masticatory it draws Rheum out of the Head, & so cures the Tooth-ach, if it come of a watery or Phlegmatick Humor. I have infused it in Purges for the Dropsy & find it Powerfully to Provoke Urine." Lord consulted a "Chirugeon" about his specimen of *Helianthus strumosus* L. (H.S. 268 f. 53) and learned that it went by the name of "All-heal."

Endangered Species

We did not find any specimens of introduced species in Lord's collections, which is not surprising given how little European settlement had occurred in coastal Carolina by 1704. We did find two endangered species.

A specimen of *Schwalbea americana*, American Chaffseed, is in the lower right corner of H.S. 158 f. 245. This is almost certainly the first collection of this plant, which was listed as a federally endangered species in 1995 (USFWS 2013). This plant is a hemiparasite native to the longleaf pine ecosystem. It is a fire-adapted species that depends on periodic fires to clear out vegetation to allow seeds to germinate and seedlings to establish themselves. Fires were regular occurrences in the longleaf pine savanna that was common in South Carolina before European settlement, but the fires and the savanna have nearly disappeared from the region today.

This is now one of the rarest plants on earth. The USFWS 2008 5-year review noted 33 occurrences in South Carolina, 12 of which were considered protected but none with formal protection agreements and only one with a formal management plan. Almost all occurrences were in the Francis Marion National Forest. Total numbers had dropped between 1995 and 2008.

We suspect that one specimen on H.S. 159 f. 28 is *Platanthera integra* (Nuttall) A. Gray ex Beck, highly endangered in South Carolina. Mark Catesby also collected two specimens of this plant, H.S. 212 f. 55 in the Sloane Herbarium, and 00087491T in the Oxford collections.

The origins of taxonomy

Lord's specimens are organized taxonomically. Lord's collections predate *Species Plantarum* (Linnaeus 1753) by nearly 50 years, but either Lord or Petiver arranged his specimens in a way that corresponds very closely to modern families. This is apparent when looking at the specimens in list form. For example, H.S. 268 ff. 1-7 contain grasses or grasslike specimens from the modern Poaceae, Juncaceae, and Cyperaceae. H.S. 268 ff. 13-61 contain almost exclusively plants from the modern Asteraceae. H.S. 284 ff. 57-69 contain only plants from Fabaceae. Lord's own notes indicate that he was classifying plants according to tribe or type, with many remarks on the similarities of specimens.

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